CORONA DIVISION
NAVAL SURFACE WARFARE CENTER

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KEEPING AMERICA'S NAVY #1 IN THE WORLD

A Systems Engineering Approach to Managing the Cost & Risk Associated with COTS Microelectronics Obsolescence in Fielded Military Systems

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SUNSET SUPPLY BASE (SSB)

A COTS Obsolescence & Long-Term Supportability Solution

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SSB Mission

Provide a Tool/Path to Mitigate the Risk of COTS Obsolescence

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COTS/NDI Obsolescence

- Problem for DoD Systems
  - Acquisition Reform Looks to COTS/NDI Benefits but NOT THE RISKS
    - Component Life Cycle Industry vs. DoD
    - Minor Changes that Affect Form, Fit, Function
  - Systems in Design Can't Keep Up
    - Often DoD systems have obsolescence built-in
- Solution to DMSMS
  - Apply Sunset Supply Base Concept
    - Develop a Win-Win-Win Relationship Among OEMs, Small Business, and Government Programs
  - SSB Implementation: SSDS Program

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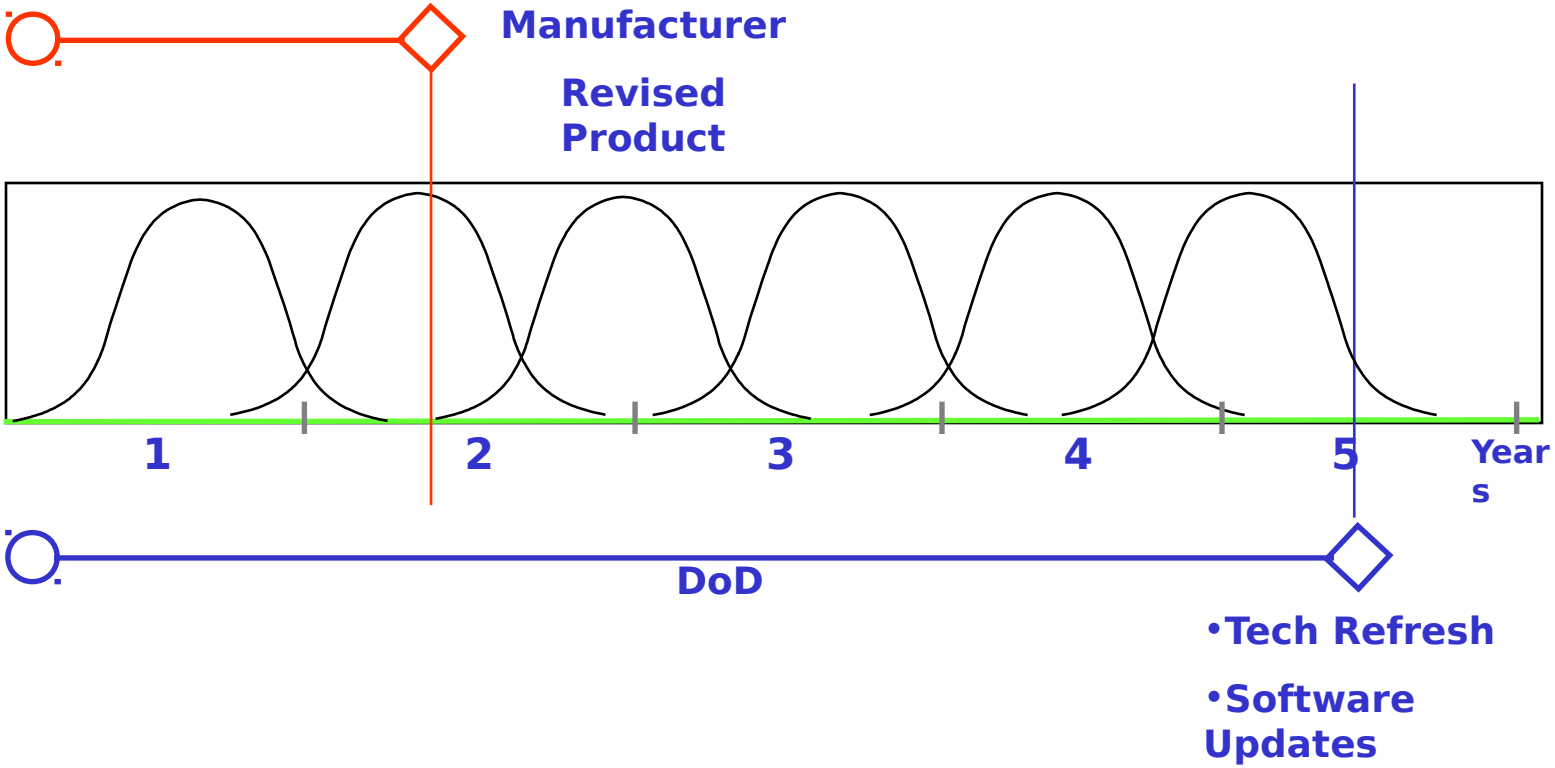
Component Life Cycle Industry vs. DoD



- COTS Management will help match the COTS Market Place with the Fleets Inertia (driven by size, availability of dollars and ships, etc.)

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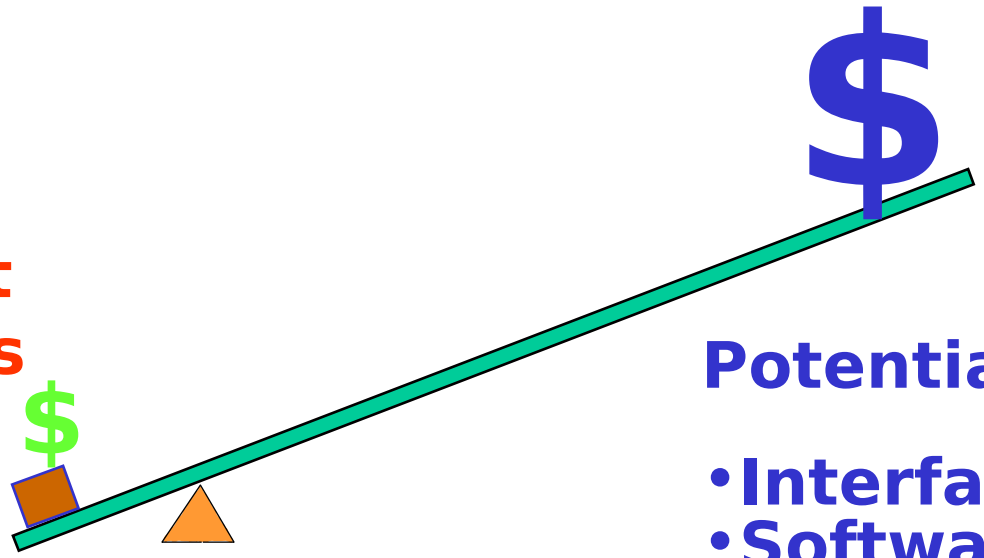
Minor Changes

Minor Product Changes



Potential Impact

- **Interfaces**
- **Software**
- **System Integration**

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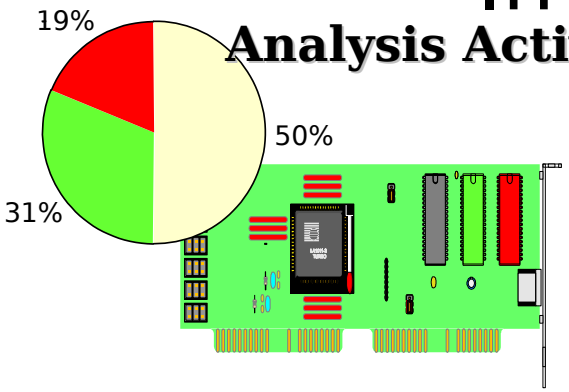
Sunset Supply Base

The Sunset Supply Base (SSB) concept, uses a Systems Engineering approach to extend COTS supportability/availability through development of a second source supplier to continue manufacturing assemblies made obsolete by the Original Equipment Manufacturers (OEM)

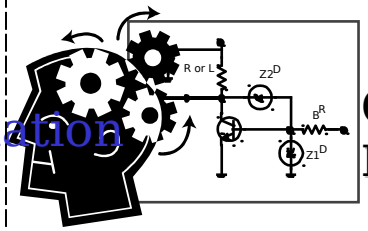
SSB System Functions Like Supportability Insurance

Implementation Process



Analysis Activity

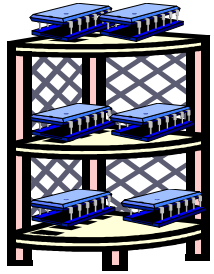
COTS Component Information



Original Manufactur

Technology Transfer?

Parts Obsolescence Report

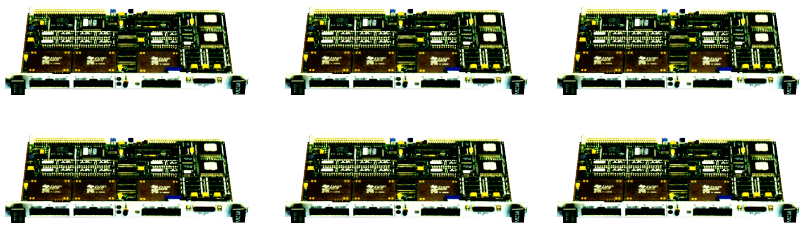


Sunset Supplier

Acquisition Support Team

Buy Required Components & Shelve

FLEET



Long Term COTS Support

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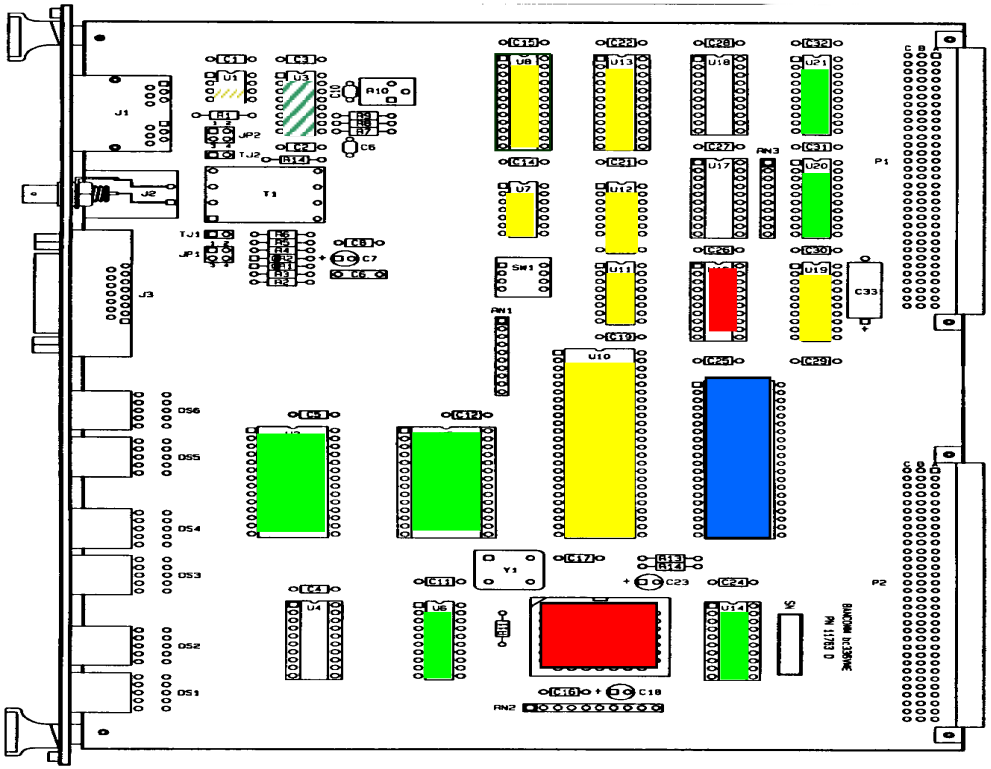
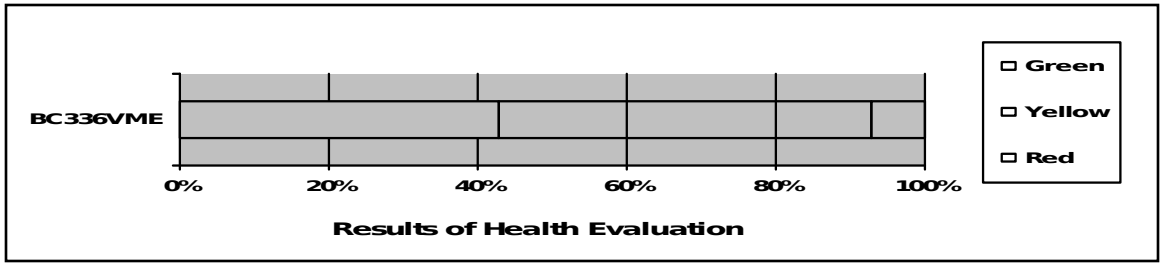
SSB Analysis



ASSEMBLY, bc336VME
TIME CODE PROCESSOR



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"WIIFM"

COTS Mfg (OEM) (CCA Developer)

- Credible Availability Claim
- No technical or business threat, protects proprietary design
- Royalty or % profit on each board sold by SSB
- Strengthens supportability claims providing long-term relationship w/DOD

Sunset Supply Base (SSB) (Build-To-Print Shop)

- New product line
- New customers
- DMSMS/obsolescence technical partnering w/third party assessment
- Long-term relationship w/customer and business planning

Program Management

- Provides another support option
- Manages System COTS Changes to Optimize Navy Benefit
- Extends ability to repair COTS
- Insight into the potential COTS obsolescence risk
- COTS risk managed at most cost effective level

Third Party Assessment Field Activity

- Long-term program support
- Defines a process that provides incoming data for analysis (DMSMS)
- Management of SSB provides program equity for many programs concurrently
- Centralized COTS supply base management for program and Fleet support

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SSB APPLIED

EXAMPLE: SHIP SELF DEFENSE SYSTEM (SSDS)

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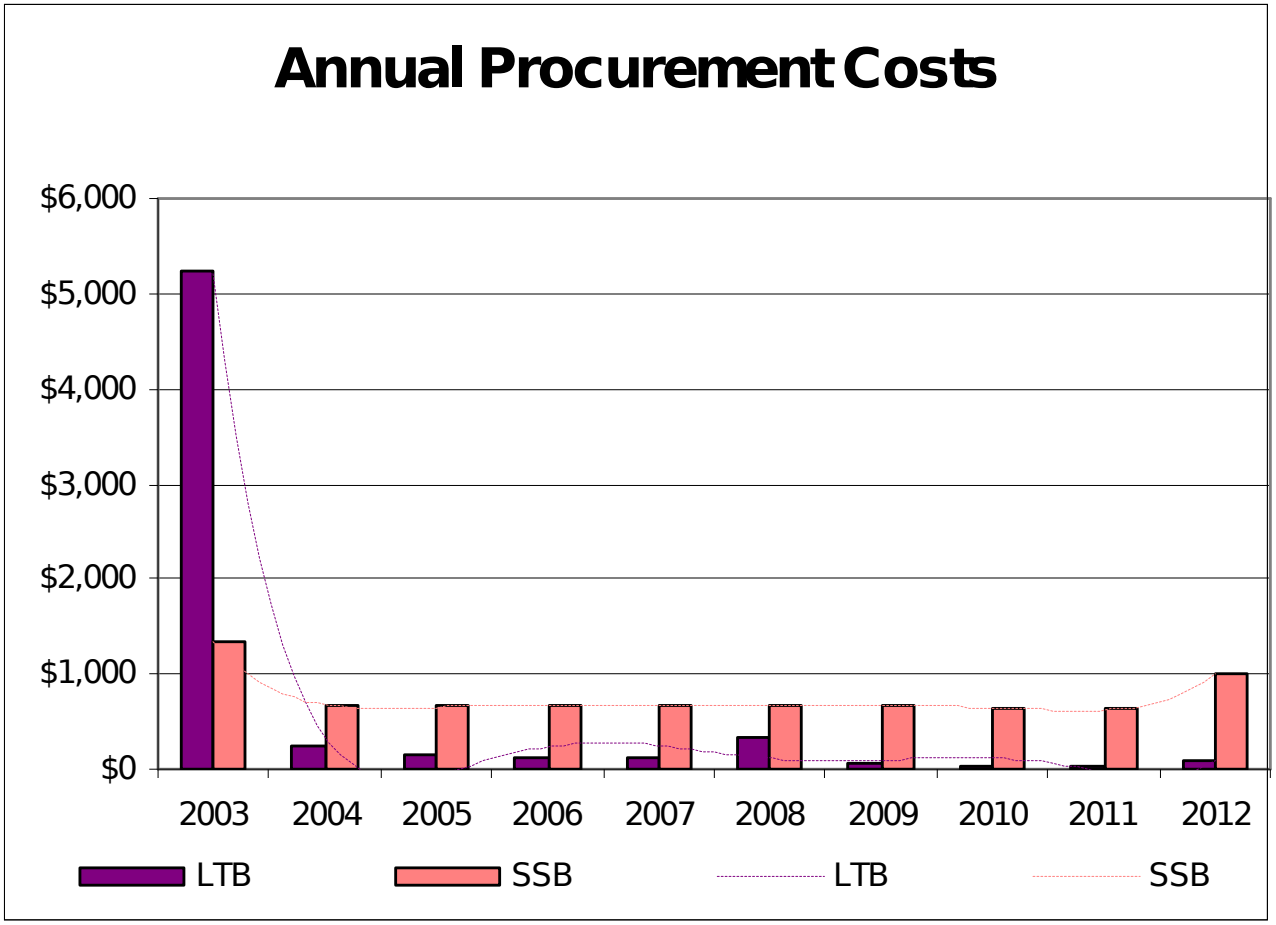
Sunset Supply Base

ITEM	OBSOLESCENCE FACTOR
PWB Power Supply Microwave/RF VME Single Board Computer	PROPRIETARY
HARDWARE	NONE
PASSIVE COMP. Environmental Impacts	MINIMAL
ACTIVE COMP. IC's, Hybrids, ASIC, etc.	MAJOR

PREDICTIVE DMSMS

Funding Profiles Comparison (LTB & SSB)



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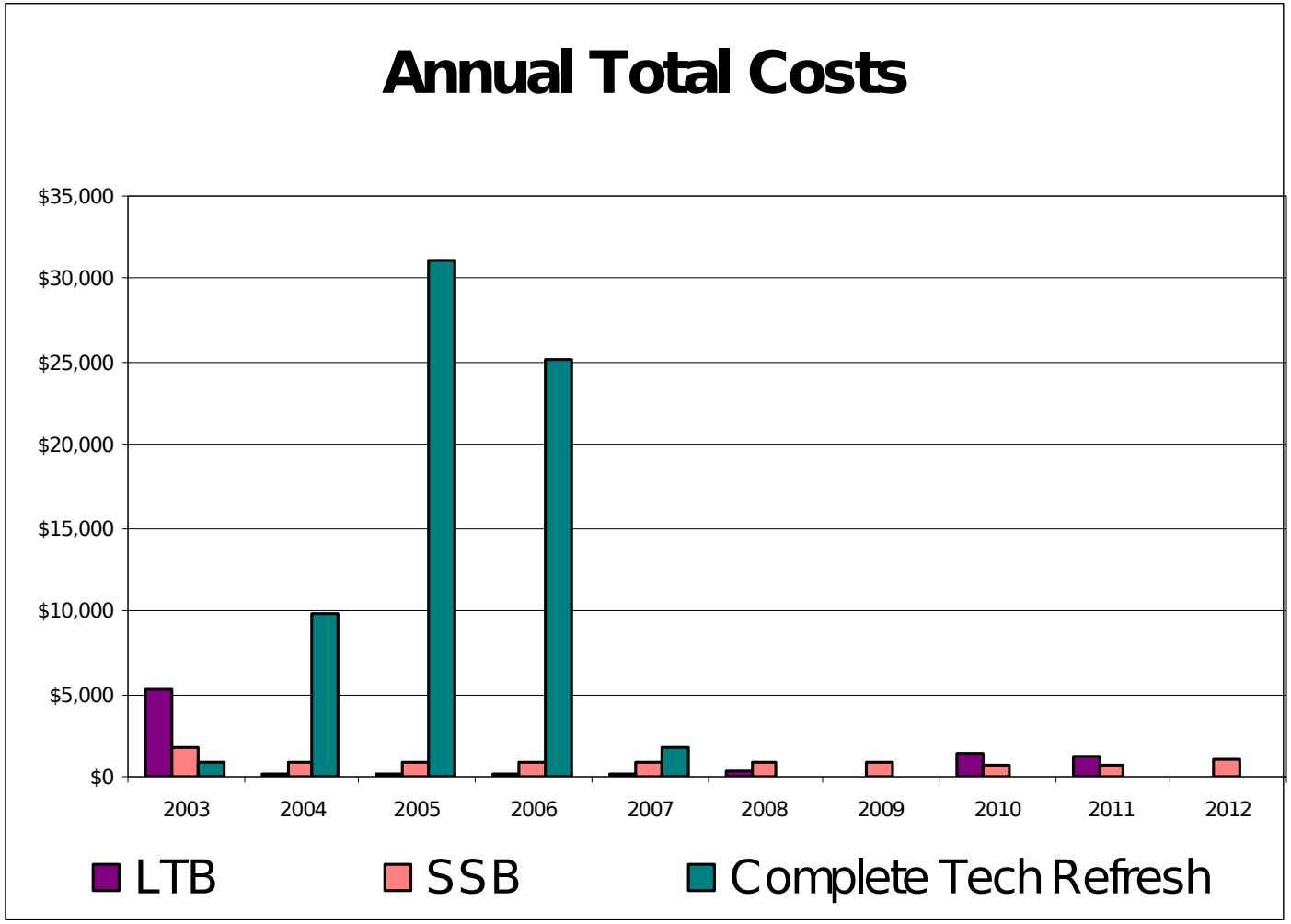
Funding Profiles Comparison (LTB, SSB, & Redesign)



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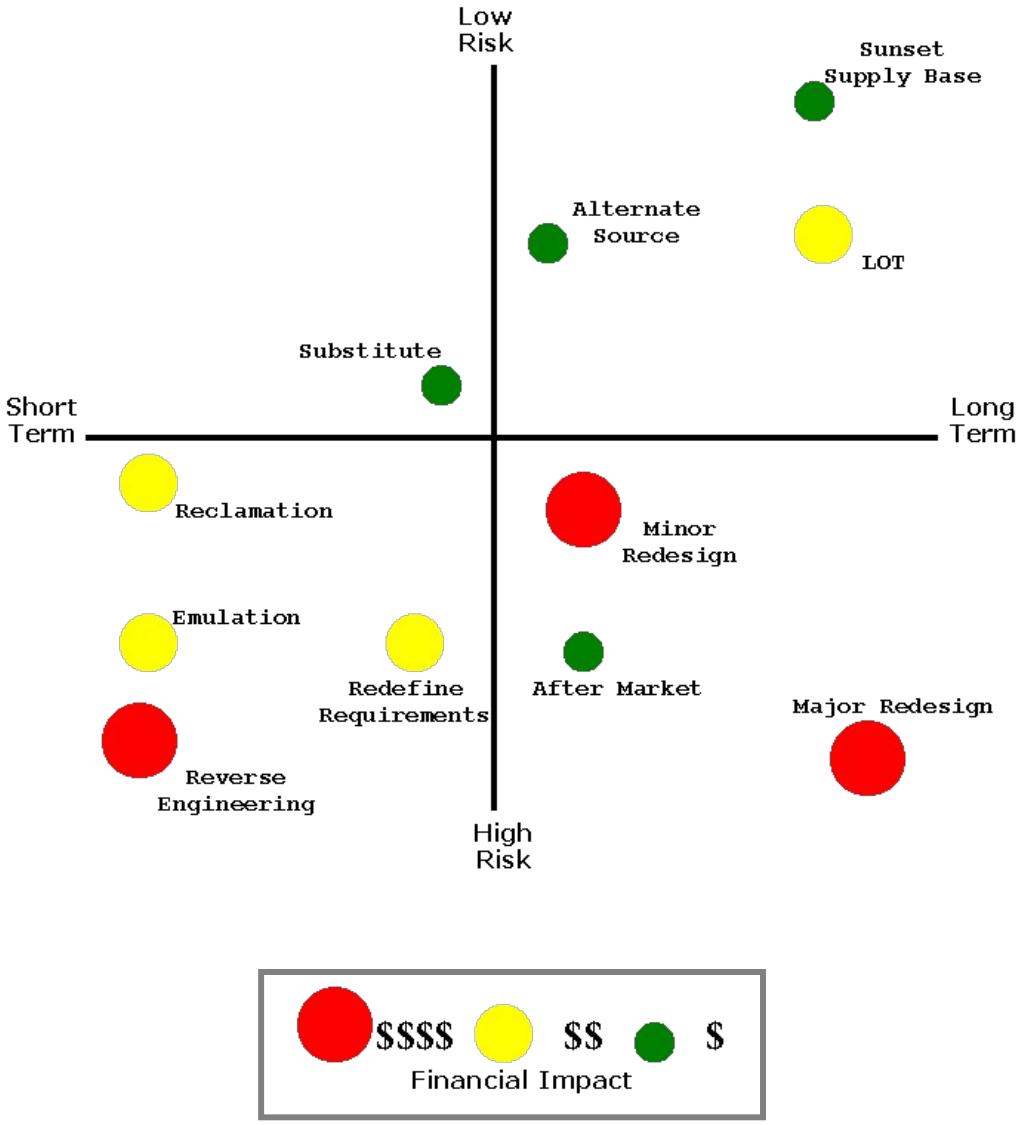
SSB Positioning & Differentiation



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Potential Impact From SSDS Direct Ongoing Support

- **Other programs using the same COTS configurations are being identified then contacted regarding participation, these include:**

✓CEC

✓Q-70

✓AN/SQQ-89

✓AN/SPS-48E

✓CIFF-SD

✓Auxiliary Data Processor (ADP)

✓AN/SYS2

✓SPS-48

✓Wrap-Around Simulator Processor (WASP)

✓Digital Radar Land Mass Simulator (DRLMS)

✓Mk-162

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Sunset Supply Base *Implementation*

- **Programs**
  - Virginia Class Submarine (PMS450)
  - Ship Self Defense System MK1 & 2 (PMS461)
  - Mine Hunting Sonar AN/AQS-20A (PMS210)
  - Underwater Imaging System (PMS-EOD)
  - SPAWAR COBLU (PMW 189)
  - Significant Interest Across the Navy and Industry
- **Partnerships**
  - NSWC Crane – Draft Memorandum of Agreement
  - NUWC Keyport – Draft Memorandum of Agreement
  - NAVICP - Initial Discussions
  - 85 Commercial Companies Have Agreed to Implement

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SSB Summary

- Less Configuration Variations
- Life Cycle Cost Reduction
- Minimized Perturbations in Support Infrastructure (manuals, system test & trouble shoot, etc)
- Technology Insertion Planned at PMO's Discretion
- Allows Continued Production of COTS Item
- Stabilize Business & Management Planning of COTS
- New Supportability Options for Program Managers
- Enhances Fleet Supportability & Availability